PCT/NZ00/00031 WO 00/55172

CLAIMS

A polynucleotide which has the nucleotide sequence of SEQ ID NO. 1 and which has the ability, when operatively associated with a nucleotide sequence encoding a peptide, to promote transcription of that nucleotide sequence, or a polynucleotide which is a functionally equivalent variant thereof.

- 2. A plant reproductive tissue promoter which has the nucleotide sequence of SEQ ID NO. 1 or a functionally equivalent variant thereof.
- 3. A plant reproductive tissue promoter which has the nucleotide sequence of SEQ ID NO. 2.
- 4. A DNA construct which comprises:

15

10

5

- (a) a polynucleotide having activity as a transcriptional promoter according to claim 1;
 - an open reading frame polynucleotide coding for a peptide; and (b)
 - a termination sequence. (c)

20

A DNA construct which comprises: 5.

- a promoter sequence according to claim 2 or claim 3; (a)
- an open reading frame polynucleotide coding for a peptide; and (b)
- a termination sequence. (c)
- 6. A construct as claimed in claim 4 or claim 5 in which the open reading frame is in a sense orientation.
- 7. 30 A construct according to claim 4 or claim 5 in which the open reading frame is an anti-sense orientation.
 - 8. A construct according to any one of claims 4-7 wherein said open reading frame polynucleotide encodes a peptide having SEQ ID NO. 3.

WO 00/55172 PCT/NZ00/00031

9. A construct according to any one of claims 4-7 wherein said open reading frame polynucleotide encodes a peptide which, when expressed in reproductive tissue of a plant, causes said plant's reproductive organs to abort.

5

10. A construct according to any one of claims 4-7 wherein said open reading frame polynucleotide encodes a peptide which, when expressed in reproductive tissue of a plant, causes said plant's reproductive organs to redefine themselves as vegetative.

IM Con

- 11. A construct according to any one of claims 4-7 wherein said open reading frame polynucleotide encodes a peptide which, when expressed in reproductive tissue of a plant, causes said plant's reproductive organs to stop development.
- 15 12. A construct according to any one of claims 4-7 wherein said open reading frame polynucleotide encodes a peptide which, when expressed in reproductive tissue of a plant, causes cell death.
- 13. A construct according to claim 12 wherein the peptide which causes cell20 death is selected from diphtheria toxin A and Barnase.
 - 14. A construct according to claim 12 wherein the peptide which causes cell death is an RNAse.
- 25 15. A construct according to claim 14 wherein said RNAse is encoded by the nucleotide sequence of SEQ ID NO. 5.
 - 16. A construct according to any one of claims 4-7 wherein said open reading frame polynucleotide encodes a peptide, which when expressed in reproductive tissue of a flowering plant, causes an alteration in the timing of flowering of said plant.

111 (M 0 30)

17. A construct according to any one of claims 4-16 which further includes:

WO 00/55172 PCT/NZ00/00031

- (d) a selection marker sequence.
- 18. A construct according to claim 17 in which said selection marker sequence is the NPTII gene.

5

19. A transgenic plant cell which includes a construct according to any one of claims 4-18.

1 1. 10

20. A transgenic plant which includes a construct according to any one of claims 4-18.

21. A transgenic plant which contains a polynucleotide according to claim 1 or a promoter according to claim 2 or claim 3, which plant has a reduced reproductive capacity.

15

20

- 22. A transgenic plant according to claim 21 wherein in said plant said polynucleotide or promoter is operatively associated with a nucleotide sequence encoding a peptide, which when expressed in reproductive tissue of the plant, causes the plant's reproductive organs to abort, redefine as vegetative or stop development.
- 23. A transgenic plant according to claim 21 wherein in said plant said polynucleotide or promoter is operatively associated with a nucleotide sequence encoding a RNAse.

25

24. A transgenic plant according to claim 23 in which the RNAse has the sequence of SEQ ID NO. 5.

MV (136)

- 725. A transgeric plant according to any one of claims 20-24 wherein said plant is a coniferous plant.
- 26. A transgenic plant according to claim 25 which is a coniferous plant of the *Pinus* genus.

WO 00/55172 PCT/NZ00/00031

27. A transgenic plant according to claim 26 which is a member of a species selected from Pinus radiata, Pinus taeda, Pinus elliotti, Pinus clausa, Pinus palustrus, Pinus echinata, Pinus ponderosa, Pinus jeffrey, Pinus resinosa, Pinus rigida, Pinus banksiana, Pinus serotina, Pinus strobus, Pinus monticola, Pinus lambertiana, Pinus virginiana, Pinus contorta, Pinus cariboea, Pinus pinaster, Pinus brutia, Pinus eldarica, Pinus coulteri, Pinus nigra, Pinus sylvestris, Pinus tecunumannii, Pinus keysia, Pinus oocarpa and Pinus maxinumoii; and hybrids between any of the above species.

A transgenic plant according to any one of claims 20-24 which is a tree.

- 29. A transgenic plant according to claim 28 which is a member of the *Eucalyptus* genus.
- A transgenic plant according to claim 29 which is a member of a species **30**. selected from; Eucalyptus alba, Eucalyptus bancroftii, Eucalyptus botyroides, Eucalyptus bridgesiana, Eucalyptus calophylla, Eucalyptus camaldulensis, Eucalyptus citriodora, Eucalyptus cladocalyx, Eucalyptus coccifera, Eucalyptus curtisii, Eucalyptus dalrympleana, Eucalyptus deglupta, Eucalyptus delagatensis, Eucalyptus diversicolor, ficifolia, Eucalyptus globulus, Eucalyptus Eucalyptus dunnii, Eucalyptus gomphocephala, Eucalyptus gunnii, Eucalyptus henryi, Eucalyptus laevopinea, Eucalyptus macarthurii, Eucalyptus macrorhyncha, Eucalyptus maculata, Eucalyptus marginata, Eucalyptus megacarpa, Eucalyptus melliodora, Eucalyptus nicholii, Eucalyptus nitens, Eucalyptus nova-anglica, Eucalyptus obliqua, Eucalyptus obtusiflora, Eucalyptus oreades, Eucalyptus pauciflora, Eucalyptus polybractea, Eucalyptus regnans, Eucalyptus resinifera, Eucalyptus robusta, Eucalyptus rudis, Eucalyptus saligna, Eucalyptus sideroxylon, Eucalyptus stuartiana, Eucalyptus tereticornis, Eucalyptus torelliana, Eucalyptus urnigera, Eucalyptus urophylla, Eucalyptus viminalis, Eucalyptus viridis, Eucalyptus wandoo and Eucalyptus youmanni; and hybrids between any of the above species.

25

5

15

20